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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Jean-Marie Vau, et al

METHOD OF DISPLAYING AN  
IMAGE CAPTURED BY A DIGITAL  
CAMERA

Serial No. 10/542,266

Filed 20 December 2003

Group Art Unit: 2628

Examiner:

I hereby certify that this correspondence is being  
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*Robin DePoint*  
Robin DePoint  
*Feb 12, 2007*  
Date

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA. 22313-1450

Sir:

**REQUEST FOR CORRECTION TO PATENT**  
**APPLICATION PUBLICATION**

A mistake has been discovered in the above-captioned Publication. The title is incorrect on the cover page and also on page 1 (copies attached). The correct title is on page 1 of the original application and also on page 1 of the Declaration and Power of Attorney submitted September 7, 2006 (copies attached).

Therefore, we are requesting a correction to the patent application Publication due to a United States Patent and Trademark Office error.

The Commissioner is hereby authorized to charge any fees in connection with this communication to Eastman Kodak Company Deposit Account No. 05-0225. **A duplicate copy of this letter is enclosed.**

Respectfully submitted,

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Enclosures

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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.



**METHOD OF DISPLAYING AN IMAGE CAPTURED BY A DIGITAL  
CAMERA.**

**FIELD OF THE INVENTION**

The present invention relates to a method of displaying a digital  
5 image, and in particular an image captured by a digital still camera. The method of  
display can be implemented for all types of display screens, but especially low-  
resolution display screens, i.e. less than the resolution of the camera, and at least  
less than that of the image to be displayed.

Portable communication equipment, such as mobile phones,  
10 provided with an integral image sensor, can in particular benefit from the  
invention. Indeed, these devices usually have a small display screen, unable to  
reproduce the details of a captured image.

**BACKGROUND OF THE INVENTION**

As mentioned above, mobile phones provided with a camera,  
15 usually only provide modest display options. This is the same for more  
sophisticated digital cameras that despite a high quality lens and high-resolution  
sensor, are only equipped with a basic monitoring screen.

The monitoring screen, however it is, can have several functions.  
One of these functions can be that of a viewfinder. Then it is used to check the  
20 framing of the image to be captured. This first function can be adapted to a  
relatively restricted screen resolution. Another function is to enable the user to  
select the destination of the captured images. The destination can be saving to  
memory, sending the image to a remote electronic album, ordering printed proofs  
of the image, or, more simply, deleting the image.

25 Sending the image to a remote electronic album, which acts as a  
memory, and the ordering of the printing of photographic proofs constitute an easy  
and increasingly widespread solution for processing the images captured by digital  
cameras. Indeed printing an image on paper enables it to be reproduced with very  
high quality, and good resolution.

30 Telephones integrating an image sensor, and some digital cameras,  
combined with transmission means, enable easy sending to a photographic service

## Combined Declaration For Patent Application and Power of Attorney

ATTORNEY DOCKET  
85308WRZ

As below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**METHOD OF DISPLAYING AN IMAGE CAPTURED BY A DIGITAL CAMERA**

The specification of which (check only one item below):

- ☐ is attached hereto.
- ☒ was filed as United States Application Serial No. 10/542,266 on July 15, 2005 and was amended on (if applicable).
- ☐ was filed as PCT international application Number on and was amended on (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the U.S. Patent &amp; Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 (a)-(d) or 365 (b) of any foreign application(s) for patent or inventor's certificate, or (365 (a) of any PCT international application(s) which designates at least one country other than the United States of America, listed below and have also identified below any foreign applications(s) for patent or inventor's certificate or any PCT international application(s) designating a least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

**PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:**

COUNTRY (if PCT, indicate PCT)	APPLICATION NUMBER	DATE OF FILING (month/day/year)	PRIORITY CLAIMED UNDER 35 USC §119			
France	0300366	01/15/2003	<input checked="" type="checkbox"/>	YES	<input type="checkbox"/>	NO
PCT	PCT/EP03/14700	12/20/2003	<input checked="" type="checkbox"/>	YES	<input type="checkbox"/>	NO
			<input type="checkbox"/>	YES	<input type="checkbox"/>	NO

I hereby claim the benefit under Title 35, United States Code, 119 §(e) of any United States provisional application(s) listed below:

**PRIOR PROVISIONAL APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. §119 (e):**

PROVISIONAL APPLICATION NUMBER	FILING DATE (month/day/year)

I hereby claim the benefit under Title 35, United States Code, §120 of any prior United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, §112, I acknowledge the duty to disclose to the U.S. Patent &amp; Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations §1.56, which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

**PRIOR US APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S FOR BENEFIT UNDER 35 USC §120:**

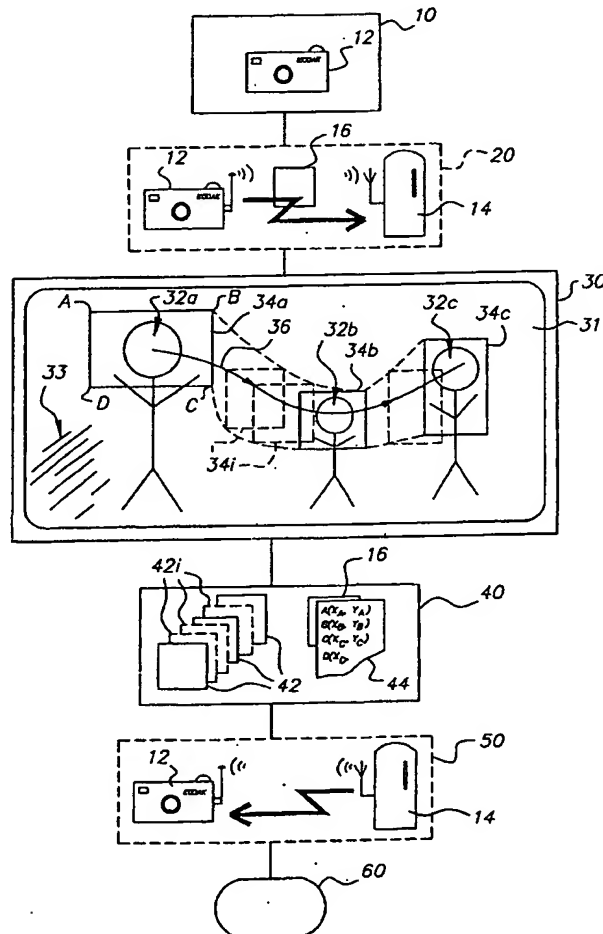
U.S. APPLICATIONS			STATUS (Check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)			
EP03/14700	20 December 2003			X	



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(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2007/0013721 A1****Vau et al.**(43) **Pub. Date: Jan. 18, 2007**(54) **METHOD OF DISPLAYING AN IMAGE CAPTURED BY A DIGITAL****Publication Classification**(76) **Inventors: Jean-Marie Vau, Paris (FR); Nicolas P. Touchard, Suresnes (FR)**(51) **Int. Cl.**  
**G09G 5/00 (2006.01)**(52) **U.S. Cl. .... 345/660****Correspondence Address:**  
**PATENT LEGAL STAFF**  
**EASTMAN KODAK COMPANY**  
**343 STATE STREET**  
**ROCHESTER, NY 14650-2201 (US)**(57) **ABSTRACT**(21) **Appl. No.: 10/542,266**(22) **PCT Filed: Dec. 20, 2003**(86) **PCT No.: PCT/EP03/14700**§ 371(c)(1).  
(2), (4) **Date: Sep. 11, 2006**(30) **Foreign Application Priority Data****Jan. 15, 2003 (FR)..... 0300366**

Method of display of at least one digital image, called initial image, on a monitoring screen having a resolution less than the resolution of the initial image, the method comprising the following steps: a) the automatic identification in the image of at least one zone-of-interest (32a, 32b and 32c), b) for each zone-of-interest identified, the automatic selection of an image portion (34a, 34b and 34c) containing the zone-of-interest, c) the formation of a sequence of images to be displayed comprising selected image portions, d) the command of a full screen display of the images of the sequence. Application to mobile phones or any other portable equipment provided with a camera sensor.



## METHOD OF DISPLAYING AN IMAGE CAPTURED BY A DIGITAL

### FIELD OF THE INVENTION

[0001] The present invention relates to a method of displaying a digital image, and in particular an image captured by a digital still camera. The method of display can be implemented for all types of display screens, but especially low-resolution display screens, i.e. less than the resolution of the camera, and at least less than that of the image to be displayed.

[0002] Portable communication equipment, such as mobile phones, provided with an integral image sensor, can in particular benefit from the invention. Indeed, these devices usually have a small display screen, unable to reproduce the details of a captured image.

### BACKGROUND OF THE INVENTION

[0003] As mentioned above, mobile phones provided with a camera, usually only provide modest display options. This is the same for more sophisticated digital cameras that despite a high quality lens and high-resolution sensor, are only equipped with a basic monitoring screen.

[0004] The monitoring screen, however it is, can have several functions. One of these functions can be that of a viewfinder. Then it is used to check the framing of the image to be captured. This first function can be adapted to a relatively restricted screen resolution. Another function is to enable the user to select the destination of the captured images. The destination can be saving to memory, sending the image to a remote electronic album, ordering printed proofs of the image, or, more simply, deleting the image.

[0005] Sending the image to a remote electronic album, which acts as a memory, and the ordering of the printing of photographic proofs constitute an easy and increasingly widespread solution for processing the images captured by digital cameras. Indeed printing an image on paper enables it to be reproduced with very high quality, and good resolution.

[0006] Telephones integrating an image sensor, and some digital cameras, combined with transmission means, enable easy sending to a photographic service provider of captured image data. This data transmission can prevent overloading of the camera's memory.

[0007] As an alternative, the camera's memory can also be freed by simply deleting image data, without their transmission. The decision to transmit or not an image for printing, or saving in a remote album, usually takes place just after the user has captured the image.

[0008] To make the choice between image conservation, image printing, and its deletion, the user often only has the monitoring screen integrated with the camera.

[0009] When the monitoring screen has a low resolution, i.e. less than that of the images capable of being captured by the sensor, it does not enable accurate representation of the quality of a printed photographic proof likely to be obtained. The proof quality finally obtained is not related to that of the monitoring screen but mainly to the resolution of the image capture sensor and to that of the image printing or reproduction means used to produce the proofs. The resolution of

these means is very much better than that of standard monitoring screens. This can result in situations where the user decides to delete an image by reckoning that its quality or its resolution is insufficient, whereas the final proof, obtained after printing would actually be perfectly acceptable. Such situations can in particular arise when the captured image contains one or more faces of photographed people, and the framing of the faces is not close up. In this case, each face, taken individually, only occupies on the monitoring screen a limited number of pixels. The displayed image does not necessarily represent the user's photographic intention and does not show the faces satisfactorily. This difficulty arises whenever an image detail is represented with insufficient accuracy to objectively estimate the advantage of printing the image or not, of keeping it or not.

[0010] Thus the user rejects images that they could have kept and had printed.

### SUMMARY OF THE INVENTION

[0011] The purpose of the invention is to propose a solution to the unfortunate situation described above.

[0012] In particular the purpose of the invention is to propose a method of display that renders with sufficient accuracy the details of an image to enable a user to assess the quality of an image with good objectivity, and hence its destination.

[0013] It is also a purpose to propose a method of display that is compatible with summary screens such as monitoring screens or screens integrated with telephones or other portable devices.

[0014] To achieve these aims, the purpose of the invention is more precisely a method of display of at least one digital image, called "initial image", on a monitoring screen having a resolution less than a resolution of the initial image, the method comprising the following steps:

[0015] a) the automatic identification in the initial image of at least one zone-of-interest,

[0016] b) for each zone-of-interest identified, the automatic selection of an image portion containing the zone-of-interest,

[0017] c) the formation of a sequence of images to be displayed comprising selected image portions,

[0018] d) the command of an enlarged display of the images of the sequence.

[0019] The initial image can be captured by a digital camera having a sensor capable of supplying images with a resolution greater than that of the monitoring screen fitted to the camera.

[0020] The enlarged display of the images of the sequence, i.e. selected image portions, enables better rendering of their details. The image portions can in particular be displayed full screen. In this case, the selected portions of the initial image are enlarged to occupy on screen the same area that the entire image would occupy. Enlargement involves no deterioration of the quality of the image, or image portions, as soon as the initial image is captured with a sensor whose resolution is greater than that of the monitoring screen used for display.